

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawing is a replacement sheet for Figure 7. Reference number 700 has been added in the replacement sheet for Figure 7.

Attachment: Replacement sheet

REMARKS

Claims 1-27 stand rejected in the present Office Action. In this response, claims 1, 11, and 21-24 are amended. Accordingly, claims 1-27 are pending in the present application. Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and reasons.

As a preliminary matter, claims 22 and 23 are amended to correct antecedent basis and typographical error. No new matter is added.

Drawing objection

In Section 1 of the Office Action, the drawings are objected to for failing to include reference number(s) mentioned in the specification. In particular, the Examiner points to the absence of reference number 700 in the drawings.

Applicant submits a replacement sheet for Figure 7 that now includes the reference number 700.

35 U.S.C. § 102(b) rejection

In Sections 2-4 of the Office Action, claims 1-5 and 7-27 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,422,243 (Brunson et al.). In particular, the Examiner stated that:

Brunson et al. discloses an inclination measurement and display device (1) and method of using comprising a conductive chamber (2) having an inner wall (4) and an outer wall (6) containing a dielectric fluid (3), at least three electrode conductive plates (7-10) spaced approximately equidistantly from the inner and outer walls immersed in said fluid (Figure 1); a processing module/microcontroller/controllable switch (48) configured to measure capacitance between each of the electrode conductive plates and the conductive chamber and to determine an overall angle of inclination and the direction of inclination of the chamber values in a first and second axis; a display (14) for displaying a numerical value corresponding to the overall angle of inclination and further comprising

indicators (50) positioned radially around the center of said device for the indication of the direction of inclination, and an oscillator (43) (Figure 5).

Brunson et al. discloses an inclination sensor having four axis capacitor plates 7, 8, 9, and 10. The axis capacitor plates 7-10 (collectively referred to as axis plates or axis capacitor plates 16) are positioned over a sealed vial 1. The vial 1 is “sealed and contains a quantity of the liquid 3 and the gas bubble 4 of predetermined volume.” The bottom of the vial 1 is defined by a lower pan portion 33 of conductive material. The top of the vial 1 is defined by a lower pan portion 34 of insulative material. “The axis capacitor plates 16 are positioned on an upper surface 36 of the cap [portion] 34.” See Col. 3, lines 5-61; Figures 1-3.

Each of the axis capacitor plates 7, 8, 9, and 10 forms a “capacitor in cooperation with the common capacitor plate 6 [(defined by the lower pan portion 33)] and the dielectric media of the cap 34, the liquid 3, and the bubble 4.” Inclination of the vial 1 causes the bubble 4 to move and this in turn causes the respective capacitances between the axis capacitor plates 16 and the common capacitor plate 6 to change. The capacitance values are then provided to bridge circuits 40 and 41 connected to each of the axis capacitor plates 16 and the common capacitor plate 6. See Col. 3, line 61-col. 4, lines 35; Figure 5.

In contrast, each of amended independent claims 1 and 24 recites, among other things, that at least three electrodes are partially immersed in a fluid. Each of amended independent claims 11 and 21 recites, among other things, that at least one electrode is partially immersed in a fluid. Support is found, for example, at Paragraphs 0021 and 0027 and Figures 4A and 4B of the present application, which disclose that three electrodes 310a-310c are “partially immersed in the fluid 308 contained within the chamber 306.”

Applicant respectfully disagrees with the Examiner’s characterization of Brunson et al. Among other things, Brunson et al. fails to disclose any electrodes partially immersed in its liquid 3. In fact, no structure is partially immersed in the liquid 3. Instead, the vial 1 only contains the liquid 3 and the bubble 4 above the liquid 3. Brunson et al.’s axis capacitor plates 7-10 are positioned *above the sealed* vial 1 and thus cannot be partially immersed in the liquid 3.

Accordingly, it is respectfully submitted that each of amended independent claims 1, 11, 21, and 24 is allowable over Brunson et al. Claims 2-10, 12-20, 22-23, and 25-27, which depend from one of claims 1, 11, 21, or 24, are also allowable over Brunson et al. for at least the same reasons as for claims 1, 11, 21, and 24.

35 U.S.C. § 102(b) rejection

In Section 5 of the Office Action, claims 1, 3-8, and 24-27 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,167,818 (Cantarella et al.). In particular, the Examiner stated that:

Cantarella et al. discloses an inclination measurement and display device (10) and method of using comprising a conductive chamber (17) having an inner wall (E) and an outer wall containing a dielectric fluid (19), at least three electrode conductive plates (A, B, C, D) spaced approximately equidistantly from each other and from the inner and outer walls immersed in said fluid (Figure 2); a processing module (24) configured to measure capacitance between each of the electrode conductive plates and the conductive chamber and to determine an overall angle of inclination and the direction of inclination of the chamber values; and a display (18) for displaying a numerical value corresponding to the overall angle of inclination and an indication of the direction of inclination in two non-parallel directions (Figure 1).

Cantarella et al. discloses a gravity sensing potentiometer 17 included in a bar 10 (e.g., a tool having an I-beam formation). The potentiometer 17 includes four arcuate electrode segments A, B, C, and D around a center electrode E. The electrode segments A, B, C, and D and the center electrode E are housed within a “sealed circular cell partially filled with a semi-conductive liquid 19.” See Col. 3, line 42-col. 4, line 36; Figure 2.

When the bar 10 is placed against a horizontal, vertical, or inclined surface, the liquid 19 is distributed within the sealed circular cell and immerses at most two of the electrode segments A, B, C, or D. “The surface of liquid 19 is always parallel to the horizontal axis regardless of how the bar is oriented.” For example, when the bar 10 is placed against a horizontal surface, “electrodes A and B are almost fully immersed and liquid 19 is equally distributed with respect to these electrodes.” When the bar 10 is placed against a surface inclined with respect to a horizontal axis

X, then electrodes A and B are immersed in liquid 19 but “more of electrode segment A is immersed than segment B.” When the bar 10 is placed against a surface inclined with respect to a vertical axis Y, then electrodes B and D are immersed in the liquid 19. Hence, “*regardless of where is bar is placed, two of the electrodes will always be immersed.*” (Emphasis added). See Col. 4, line 36-col. 5, line 5; Figures 2, 4, and 5.

In contrast, each of amended independent claims 1 and 24 recites, among other things, that at least three electrodes are partially immersed in a fluid. No where does Cantarella et al. disclose at least three electrodes being partially immersed in a fluid, as recited in each of claims 1 and 24. Cantarella et al. discloses determining an inclination based on two electrodes immersed in the liquid 19.

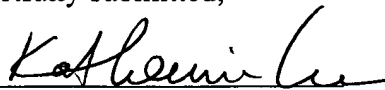
Accordingly, it is respectfully submitted that each of amended independent claims 1 and 24 is allowable over Cantarella et al. Claims 3-8 and 25-27, which depend from one of claims 1 or 24, are also allowable for at least the same reasons as for claims 1 and 24.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. **03-1952** referencing docket no. **542262000200**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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Attachments